REMARKS

The present invention is directed to 4-cyclopentyl resorcinol monohydrate. Claims 2, 4-8, and 11-14 remain in the application. None of these claims are being amended in this submission.

The USPTO has rejected these claims under 35 USC 103 in light of United States Patent Number 6,132,740 ("Hu"). The USPTO has stated that Hu discloses 4-cyclopentyl resorcinol and its use to lighten skin. The USPTO has also asserted that the claims would be obvious in light of this disclosure. It is respectfully submitted that the rejection is in error and should be withdrawn for the following reasons.

While Hu discloses 4-cyclopentyl resorcinol and its use to decrease pigmentation, this reference also discloses a less than optimal isolation procedure for this compound. Example 2 of Hu describes a complicated isolation procedure for 4-cyclopentyl resorcinol, in which the crude is recovered from the reaction as an oil. Hu then discloses subjecting this oil to a chromatographic separation to obtain 4-cyclopentyl resorcinol.

The Examiner's attention is directed to page 2, lines 1-14 of the specification for further discussion of the problems facing the inventors when they tried to produce large quantities of 4-cyclopentyl resorcinol. The process of Hu produces an oil containing 4-cyclopentyl resorcinol and several of its positional isomers (i.e. 4,6-dicyclopentyl resorcinol, 6-cyclopentyl resorcinol, etc). Separating these positional isomers from the desired product requires an additional isolation step such as chromatography, distillation, etc. Typically chemists attempt to avoid such complicated isolation procedures when developing processes that may be scaled up.

The Examiner's attention is also directed to Examples 1 and 3, located on pages 12-14 of the specification. Examples 1 and 3 illustrate how the monohydrate of 4-cyclopentyl resorcinol solves this problem. The inventors modified the Hu process by contacting the crude with an admixture of water and toluene. This resulted in the formation of the monohydrate, which precipitated from solution.

The monohydrate simplifies the isolation procedure. It eliminates the need to subject the oil to any distillation or chromatographic separation. The monohydrate of 4-cyclopentyl resorcinol precipitates from solution leaving the undesired positional isomers in solution. Filtration, or other simple isolation techniques, may then be used to separate the desired 4-cyclopentyl resorcinol from the undesired by-products.

While one skilled in the art would recognize the problems associated with the Hu process, nothing in that reference would motivate one to prepare the monohydrate, nor to expect that it would simplify the isolation. Hu is lacking both the motivation and the expectation of success required to render the claims obvious.

Withdrawal of the rejection and reconsideration is respectfully requested. It is respectfully submitted the claims are in condition for allowance. The undersigned invites a phone call form the USPTO if any minor amendments are required to place the case in condition for allowance.

Respectfully submitted,

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